ProCurve Networking by HP

ProCurve Mobility Infrastructure Solutions

ProCurve Networking by HP has taken mobility to an exciting new stage, unifying wired and wireless networking into a secure, cohesive mobility infrastructure. ProCurve offers a comprehensive family of wireless offerings, with solutions for both standalone and coordinated access points — all consistently managed under the ProCurve Adaptive EDGE Architecture™ framework. ProCurve's mobility infrastructure solutions encompass the following:

Standalone Access Points

- ProCurve Intelligent Edge Wireless Access Point 530
- ProCurve Wireless Access Point 420
- Antennas
- ProCurve Mobility Manager

Wireless LAN System

- ProCurve Wireless Edge Services Module xl Module for the Switch 5300xl series, and the Wireless Edge Services zl Module to enable wireless services on the ProCurve Switch 5400zl series (new) and Switch 8212zl (new)
- ProCurve Switch 5300xl series, Switch 5400zl series or Switch 8212zl
- ProCurve Wireless Services Redundant xl Module and zl Module (new)
- ProCurve Radio Ports 210, 220 and 230
- Antennas
- ProCurve Mobility Manager

Secure Access Series

- ProCurve Access Control Server 745wl
- ProCurve Switch xl Access Controller Module

Each of these mobility approaches provides advantages for different environments. By offering a range of approaches that are all part of a consistent framework, ProCurve enables streamlined and unified wired/wireless management resulting in reduced complexity and less operational expense; a consistent and customized user experience regardless of how or where the user connects; and the ability to support both current and emerging applications without future infrastructure upgrades.

invent

Enterprise WLAN Technology Flourishes

Enterprises are finding that wireless LAN (WLAN) technology is good for business: providing workers with more flexible connection to the corporate network can raise productivity as well as increase the overall agility of the enterprise.

Not surprisingly, then, industry analysts are finding companies enthusiastic about WLAN. According to a Forrester Research survey conducted in June 2007, "planned adoption of in-house WLANs continues to grow in the Europe, Middle East and Africa region, with 46 percent of European enterprises having already adopted a WLAN, while 30 percent have an interest in deploying, suggesting a continuing trend towards more widespread adoption[1]". According to Gartner's Wireless LAN Equipment Forecast, "Global spending on the enterprise Wireless LAN market is expected to increase by 8 percent compound annual growth rate (CAGR) between 2005 and 2010[2]".

WLAN deployments are particularly prevalent in vertical industries such as healthcare, retail, education and logistics. In these areas, mobility is woven into the fabric of everyday operations. For instance, healthcare workers in hospitals are constantly on the move as they attend to patients. Being able to gain immediate access to patient-related information from anywhere in the hospital can dramatically improve decisions and outcomes for patients and boost healthcare workers' efficiency.

In the retail world, the ability for workers to respond quickly to customers' questions from anywhere in the store can significantly enhance the customer retail experience and the likelihood of a sale. On university campuses, liberating instructors and students from the constraints of wired network access opens new possibilities for more creative and effective instruction and research.

[1] Chris Silva, "Tackling Ubiquitous Enterprise Mobility". Forrester, June 2007 (based on 166 respondents).

[2] Christian Canales, "Forecast: Wireless LAN Equipment, Worldwide, 2003-2010". Gartner, June 2006.

More broadly, powerful new applications are emerging that enhance the attractiveness of WLANs in areas beyond the early-adopting vertical industries. These applications include Voice over WLAN (VoWLAN), which combines WLAN and Voice over Internet Protocol (VoIP) technologies to enable voice communications over a WLAN, and guest access, which is the need to permit yet control network access by non-employees. The future appears bright with other application areas such as location-based services and presence as well. For users and network administrators alike, the promise of using one network fabric, WLAN, to deploy these diverse emerging applications is very compelling..

Challenges to WLAN Adoption

Despite the obvious advantages of WLAN, many enterprises remain on the sidelines. Some are reluctant to entrust sensitive corporate information to WLANs, concerned about security safeguards for data protection, user authentication, rogue device detection and unauthorized intrusions. Other enterprises balk at the added complexity of managing separate wired and wireless networks.

Still others feel bombarded by complex and often contradictory information about the rapidly developing WLAN market segment. This market overflows with a wide range of WLAN technologies, products and architectures such as "fat" access points, "thin" access points with WLAN controllers and other approaches. A related challenge is navigating the confusing marketplace of various vendors, many of whom lack the longevity and trusted brands that enterprises seek to safeguard their investments.

Another challenge is that wireless networks have for the most part evolved separately from wired networks. As a result, even networking vendors that offer both wired and wireless equipment and network management products have sold them as two separate "tracks," leaving much of the coordination up to individual customers.

All enterprises, regardless of their stage of WLAN adoption, want clear answers about which mobility solutions to deploy, as well as when and where to deploy them. And as organizations begin to rely on WLANs as they now rely on wired LANs, they increasingly care about the security, ease of deployment, session persistence, quality of service and — perhaps most importantly — ease of management of their entire mobility infrastructure once it is in place.

ProCurve Offers a Unified Approach

All ProCurve products and solutions — both wired and wireless — share the foundation of the ProCurve Adaptive EDGE Architecture (AEA), a cohesive vision designed to best meet network infrastructure needs both today and in the future. The ProCurve Adaptive EDGE Architecture approach is to push intelligence to the edge of the network, where users connect, enabling command from the center with control to the edge.

The ProCurve AEA foundation led to the ProCurve Adaptive Networks vision, an approach to network infrastructures that can significantly boost organizations' ability to compete effectively in the face of rapid change. By being adaptive to users, to applications and to organizations, Adaptive Networks fortify security, increase productivity and reduce complexity across the organization.

ProCurve's mobility offerings are a prime example of the ProCurve Adaptive Network vision in action. They provide maximum choice and flexibility to meet a wide array of customer needs, securely and without added complexity. Because ProCurve's wireless solutions have evolved within the same AEA framework as its wired solutions, ProCurve unifies wired and wireless networking in ways not previously possible.

This holistic approach enables enterprises to manage all their mobility options consistently with one another, as well as with wired network solutions. ProCurve's centralized, network-wide management and secure access control makes it easy to deploy and centrally manage a secure, yet flexible, multi-service network that can lead to greater productivity as well as better return on IT investment.

In addition, ProCurve's infrastructure is based heavily on open standards and strengthened by industry-leading warranties and robust service and support. As a result, ProCurve offers built-in investment protection for its mobility solutions, allowing enterprises to adapt easily to changing needs and incorporate future applications — such as VoWLAN — into the same infrastructure deployed today.

Overview of ProCurve Mobility Infrastructure Solutions

ProCurve's expansion of its mobility offerings means that organizations can now choose the WLAN approaches and products that best fit their individual needs.

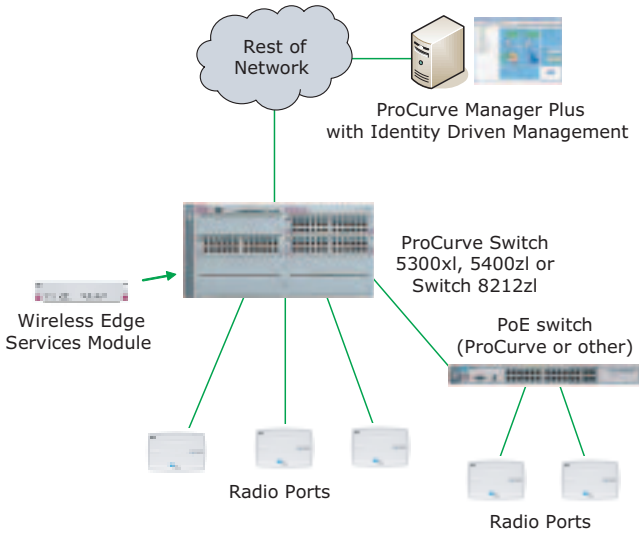
ProCurve Wireless LAN System

ProCurve's wireless LAN system comprises integrated, highly available wired and wireless services aimed at campus deployments and medium to large remote sites. ProCurve wireless LAN systems are available for a wide range of deployment scenarios, from the LAN edge to the core. Wireless LAN systems can be deployed using the majority of ProCurve chassis switch offerings, including the ProCurve Switch 5300xl series, Switch 5400zl series and Switch 8212zl switches.

A ProCurve wireless LAN system consists of a ProCurve Wireless Edge Services Module, one or more ProCurve Radio Ports (coordinated access points) and Switch 5300xl series chassis or choice of ProCurve premier zl switch chassis. When combined into a complete wireless edge services solution, these products create a secure, unified wired and wireless ProCurve intelligent edge with the following business benefits:

- Centralized, unified wired and wireless network management, which reduces operational overhead and costs
- Highly secure, yet flexible, network access to accelerate business opportunities
- Business-critical application support, including a VoWLAN-ready architecture
- Highly available operations and network resiliency to maintain business continuity
- Easy deployment, scalability and pay-as-you-go capacity expansion via software license to reduce total cost of ownership

ProCurve WLAN System Topology


Rest of Network
ProCurve Manager Plus with Identity Driven Management
ProCurve Switch 5300xl, 5400zl or Switch 8212zl
Wireless Edge Services Module
PoE switch (ProCurve or other)
Radio Ports
Radio Ports

ProCurve Standalone Access Points

ProCurve standalone access points provide an excellent option for small organizations to enterprises with some level of distributed operation, such as satellite branches or campus environments.

The ProCurve Access Point 530 is a highly intelligent standalone access point ideal for distributed sites. The 530 intelligent edge AP is an enterprise-class, dual-radio access point with support for 802.11b/g and 802.11a/b/g standards. Its maximum flexibility in deployment and extensive built-in capabilities make it an ideal solution for distributed office environments (e.g., organizations having many, smaller remote or branch offices or standalone small offices).

The Access Point 530 offers the following:

- Robust functionality including a comprehensive range of industry-proven user authentication methods and wireless security.
- Consistent, centralized network management for reduced operational overhead and costs — with centrally administered, edge-enforced, identity-driven access control via ProCurve Identity Driven Manager (IDM), for highly secure yet flexible control of access to the network.

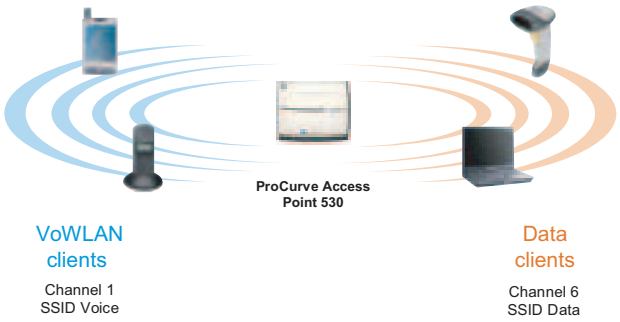
- Wireless sFlow, to extend the ProCurve Adaptive Networks vision by enabling centralized network visibility of wired and wireless network activity.
- Browser-based user authentication, which simplifies authentication of mobile users to the wireless network.
- Adaptive transmit power control: enhances the performance of the wireless LAN by minimizing co-channel interference.
- Group AP configuration to simplify device and WLAN configuration by automatically updating configuration changes across a group of access points.
- Business-critical application support, including standards-based QoS and a VoWLAN-ready architecture.
- Remote-site RADIUS backup for distributed offices and built-in RADIUS authentication server for standalone sites, which extends enterprise-grade wireless security to small WLAN deployments that operate without a local RADIUS server.
- Simplified deployment and reduced installation costs via IEEE 802.3af PoE support.
- Simultaneous 802.11a and 802.11b/g radio operation for high-capacity, dual-band wireless client connectivity.
- Dual 802.11b/g radio operation, which provides either high-capacity 802.11b/g data or dedicated data and voice wireless LAN coverage with a single access point in networks where support for 802.11a is not a requirement.
- The ProCurve Access Point 530 also offers both integrated diversity omnidirectional antennas as well as per-radio external antenna connectors. ProCurve's family of external access point antennas increases the radio frequency (RF) coverage and reliability of the network, including wireless bridging between access points.

The ProCurve Wireless Access Point 420 is a cost-effective, stand-alone single 802.11b/g radio access point providing secure, trouble-free wireless LAN connectivity for medium to larger enterprises.

Capabilities of the Wireless Access Point 420 include the following:

- Offers the latest standards-based security — including support for IEEE 802.11i, WPA2 and WPA plus multiple SSID support, rogue access point and wireless ad-hoc network detection — so mobile users can enjoy wireless network access without compromising security
- IEEE 802.11b/g single-radio design provides choice for support of 802.11g and legacy 802.11b wireless clients
- Detachable antenna design enables use of external antenna configurations for improved radio coverage and performance
- Simplified deployment and reduced installation costs via IEEE 802.3af Power over Ethernet (PoE) support

ProCurve Access Point 530: Highly Flexible Design



Simultaneous 2.4 GHz, dual radio support can be used for either high-capacity data or dedicated data/voice

Benefits of Wired and Wireless Integration
ProCurve Wireless Edge Services Modules, working in conjunction with ProCurve Radio Ports, simplify the deployment and management of a wireless LAN by seamlessly integrating centralized RF management, advanced wireless services and secure wireless network access control into ProCurve's line of premier xl and zl switch chassis family.

This modular approach to enabling wireless services also simplifies network design and deployment by leveraging the inherent benefits of a chassis architecture, including choice of port type, density and Power over Ethernet (PoE) capability, in addition to modular expansion to scale as network needs change. Further, greater resiliency results from using ProCurve switching capability as much as possible for deployment of mobility services, rather than relying on a separate dedicated overlay.

ProCurve intelligent edge switches already offer identity-driven access control to network resources over wired network connections. With the addition of the ProCurve Wireless Edge Services Modules, these same role-based access policies, dynamically generated by built-in support for ProCurve Identity Driven Manager, are also enforced across the wireless edge for wireless clients connecting to the network through ProCurve Radio Ports.

This unified approach to wired and wireless policy management provides edge-enforced security and network access control on every network connection regardless of whether a user connects to the network wirelessly or through a wired port. Moreover, wired and wireless users are presented with a consistent and personalized view of the network based on user identity and time of day.

The ProCurve wireless LAN systems also take advantage of the Switchs' built-in connection-rate filtering based on Virus Throttle technology. This ProCurve-developed solution addresses new threats not yet recognized by virus protection software. With Virus Throttle technology, ProCurve WLAN systems are able to automatically discover attacks originating by wired or wireless devices and rate-limit or even block infected traffic from entering the network, giving network managers the time necessary to implement a response.

Advanced Wireless Services
ProCurve Wireless Edge Services Modules provide a single point to configure system-wide wireless LAN setup and operation, including SSID, security and authentication options as well as advanced wireless services. Wireless LAN settings are automatically administered to designated ProCurve Radio Ports, eliminating the cost and time associated with individual configuration of access points. Advanced wireless services include the following:

- Network self-healing: In the event of a radio port failure, the module will automatically adjust transmission power and data rate on adjacent ProCurve Radio Ports to maintain wireless LAN coverage.
- RF detection and interference avoidance: The system automatically recalibrates radio port channel assignments to avoid environmental or other 802.11-based wireless interference.
- Wireless intrusion detection: Wireless Edge Services Modules can also guard against hackers who use wireless stations to launch attacks, monitoring stations for suspicious behavior that may signal a denial-of-service (DoS) attack.
- Stateful packet inspection firewall: Inspects and drops routed packets with invalid TCP flags, corrupted packets and stops common DoS attacks.
- Fast, secure roaming: Enables seamless, fast Layer 2 roaming with pre-cached authentication credentials for wireless users to help enable real-time business applications.

- Layer 3 radio port adoption and client roaming: Simplifies wireless LAN deployment across large multi-subnetworks and further enables time-sensitive business applications.
- Wi-Fi WMM and unscheduled Automatic Power Save Delivery (uAPSD) support: Provides QoS prioritization of time-sensitive traffic and extends the battery life for Wi-Fi devices such as VoWLAN handsets.
- Built in wireless sFlow sampling technology: Extends the ProCurve unified network vision by enabling centralized network visibility of wired and wireless network activity.
- Secure, convenient guest access and administration: Provides an alternative to IEEE 802.1X-based authentication for wireless clients to access network resources.

Simple Installation, Deployment and Scalability
Upon installation of a Wireless Edge Services Module, the switch automatically configures the module to discover and adopt ProCurve Radio Ports. Once a ProCurve Radio Port is connected to a PoE-enabled network port, the device will be automatically discovered and configured by the Wireless Edge Services Module.

- ProCurve Radio Ports are available in three different models-the ProCurve Radio Port 210, 220 and 230-providing choice and flexibility to address a broad range of wireless deployments. All ProCurve Radio Ports support PoE as the only power source.

Both ProCurve Wireless Edge Services xl and zl Modules, as purchased, provide support for up to 12 ProCurve Radio Ports. Both modules easily accommodate additional radio port capacity with the purchase of radio port licenses, in increments of 12 (xl and zl models) or 48 (zl module only) radio ports. Each individual Wireless Edge Services xl Module can support a maximum of 48 radio ports, with the Wireless Edge Services zl Module capable of supporting up to 156 Radio Ports. The ProCurve Switch 5300xl series can accommodate two Wireless Edge Services xl modules per chassis. The zl chassis family can support up to four Wireless Edge Services zl Modules per chassis to accommodate a maximum of 96 or 624 Radio Ports, respectively.

ProCurve Secure Access Series

The ProCurve Secure Access 745wl in conjunction with the ProCurve Switch xl Access Controller Module (ACM) provides a specialized, highly secure access solution for demanding client environments. The easy-to-deploy clientless guest access solution is designed for installations that must deal with uncontrolled clients, such as schools and universities, hospitals and companies that employ temporary workers or contractors.

The ProCurve Secure Access series enables the following:

- Identity-based rights management
- Wireless data security
- Secure subnet roaming
- Virtual private network (VPN) termination
- Flexible deployment schemes that work with equipment from multiple networking vendors

This mobility solution enables network managers to increase business productivity by providing mobile users with secure and appropriate access to network services without risk to the network.

Designed to reduce the cost and complexity of securing a mobile LAN and providing rich guest access services, the ProCurve Secure Access Solution easily integrates into existing authentication services, networks and WLAN infrastructures, providing a superior return on IT investment. IT administrators can use the ProCurve Secure Access Solution centralized policy and system management to easily adjust user and security policies in response to evolving business needs.

The ProCurve Switch xl Access Controller Module works with the ProCurve Switch 5300xl series to deliver a unique approach to integrating rich guest access services, wireless VPN and secure subnet roaming with the flexibility of a full-featured intelligent switch. Centrally managed from the ProCurve Access Control Server 745wl, the Access Controller Module enables wireless and wired mobility so that network managers can easily deploy edge-enforced access control on existing 5300xl switched networks — or design new, highly scalable, secure Switch 5300xl-based WLANs.

The ProCurve Secure Access solution can be easily deployed in conjunction with ProCurve standalone access points, ProCurve WLAN systems or third-party WLAN solutions.

Streamlined, Consistent Management

A key aspect of all ProCurve's mobility solutions is streamlined, consistent management regardless of choice in wireless architecture deployment options and across both wired and wireless networks. ProCurve delivers the following management approaches and tools:

- **Device management.** ProCurve Manager Plus (PCM+) provides a common management foundation across the entire network, wired and wireless. PCM+ is a secure, advanced Windows-based network management tool that allows administrators to configure, update, monitor and troubleshoot ProCurve devices centrally with easy-to-use screens. PCM+ can also be enhanced with plug-in modules to provide additional mobility, security and convergence features.

  One of these PCM+ plug-in modules is ProCurve Mobility Manager (PMM), a simple yet powerful management tool to centrally configure, update, monitor and troubleshoot ProCurve wireless access points and wireless edge services modules. PMM's capabilities include basic rogue device detection and alerting, client association visibility, group-based access point configuration and firmware updates, and customizable quick-view screens.

- **User-based management and access control.** ProCurve provides consistent, integrated user-based policy management and access control via ProCurve IDM, another PCM+ plug-in. Centrally administered IDM policies enforced on every network connection ensure that only authorized users gain access to the network. IDM dynamically applies security, access and performance settings to network infrastructure devices based on user, device, location, time and client system state. IDM dynamically configures identity-driven access rights to provide appropriate access regardless of whether a user connects wirelessly or through a wired port. By enabling edge-enforced policies, IDM presents users with a consistent and personalized view of the network wherever and whenever they connect to it.

Standards-based and easy to use, IDM allows network administrators to define and manage policies from a central location, eliminating the need to configure each network element separately. By automatically managing intelligent network access in this way, IDM gives network administrators more control over their networks, enables more productivity from the IT staff and supports greater adaptability in an increasingly competitive business environment.

- **Integration with ProCurve technology partners for rich WLAN management.** ProCurve works with partners such as AirWave Wireless to enhance the breadth of wireless network management tools available to customers.

For environments demanding more advanced WLAN management capabilities, the AirWave Management Platform (AMP) suite of software tools provides rich monitoring, robust intrusion detection, site planning assistance and RF visualization for ProCurve as well as mixed-vendor environments. The AirWave centralized, automated WLAN management solution can reduce support costs, improve performance and enhance security. AMP gives network administrators a single point of intelligent control from which to monitor, analyze and configure — in real time — even complex, multi-vendor wireless network infrastructures.

ProCurve Manager Plus can integrate with AirWave AMP, allowing for network administrators to more easily manage their wired and wireless networks.

Choosing the Best Solution

Integrated vs. overlay? Standalone vs. coordinated? How to choose which wireless LAN approach is best for each individual situation?

Recent additions to the ProCurve mobility infrastructure solution family open up new doors and add maximum choice and flexibility to meet a wide range of customer needs. The following chart provides guidance on what solution approaches and components work best for different environments and needs. This is not meant to be an a detailed guide, but rather is intended as a high-level tool to help suggest appropriate directions.

Business campus or medium to large remote sites Many clients, Larger buildings				
		ProCurve Wireless LAN System	**ProCurve Standalone Access Points**	**ProCurve Secure Access Series**
Customer Priorities	• Resiliency • Self-healing • Ease of deployment • Lower OPEX • Easy scalability • Layer 3 roaming	BEST FIT The ProCurve Wireless Edge Services xl or zl Module and Radio Ports provide an ideal solution.		
Additional Customer Priorities	• VPN termination to secure wireless traffic • No control over type of wireless device, configuration • Zero-config guest access			BEST FIT ProCurve Access Control Server 745wl and Switch xl Access Controller Module can be added to provide additional specialized capabilities.

Small satellite branches or standalone small offices
Fewer clients per site

		ProCurve Wireless LAN System	ProCurve Standalone Access Points	ProCurve Secure Access Series
Customer Priorities	• Flexibility in deployment • Remote management, standalone operation • Out of box capability • Unified access control, policy and device management • WAN failure survivability • Local authentication at small sites		BEST FIT The ProCurve Access Point 530 with centralized access control, management via PCM/IDM provides an ideal solution for small satellite branches of an enterprise.	
Additional Customer Priorities	• Layer 3 roaming • VPN termination to secure wireless traffic • No control over type of wireless device, configuration • Zero-config guest access			BEST FIT ProCurve Access Control Server 745wl and Switch xl Access Controller Module can be added to provide additional specialized capabilities.

Branch or campus environments with extensive non-ProCurve wireless infrastructure

		ProCurve Wireless LAN System	ProCurve Standalone Access Points	ProCurve Secure Access Series
Customer Priorities	• VPN termination to protect wireless traffic • Layer 3 roaming • Zero-config guest access • Granular user-based wireless access control and policy enforcement		BEST FIT Access Point 420 (If additional access points are required) BEST FIT Access Point 530 (If additional access points AND simultaneous 802.11a + g are required)	BEST FIT Easy overlay solution to existing wireless environments.

Any size wireless environment				
		ProCurve Wireless LAN System	**ProCurve Standalone Access Points**	**ProCurve Secure Access Series**
Customer Priorities	• Wireless site planning assistance • RF visualization • Advanced monitoring and troubleshooting • Advanced intrusion detection • Multi-vendor WLAN management	BEST FIT Add AirWave to whatever hardware solution/approach is most appropriate for customer environment/priorities, based on guidance provided above.		

Preparing Now for the Future

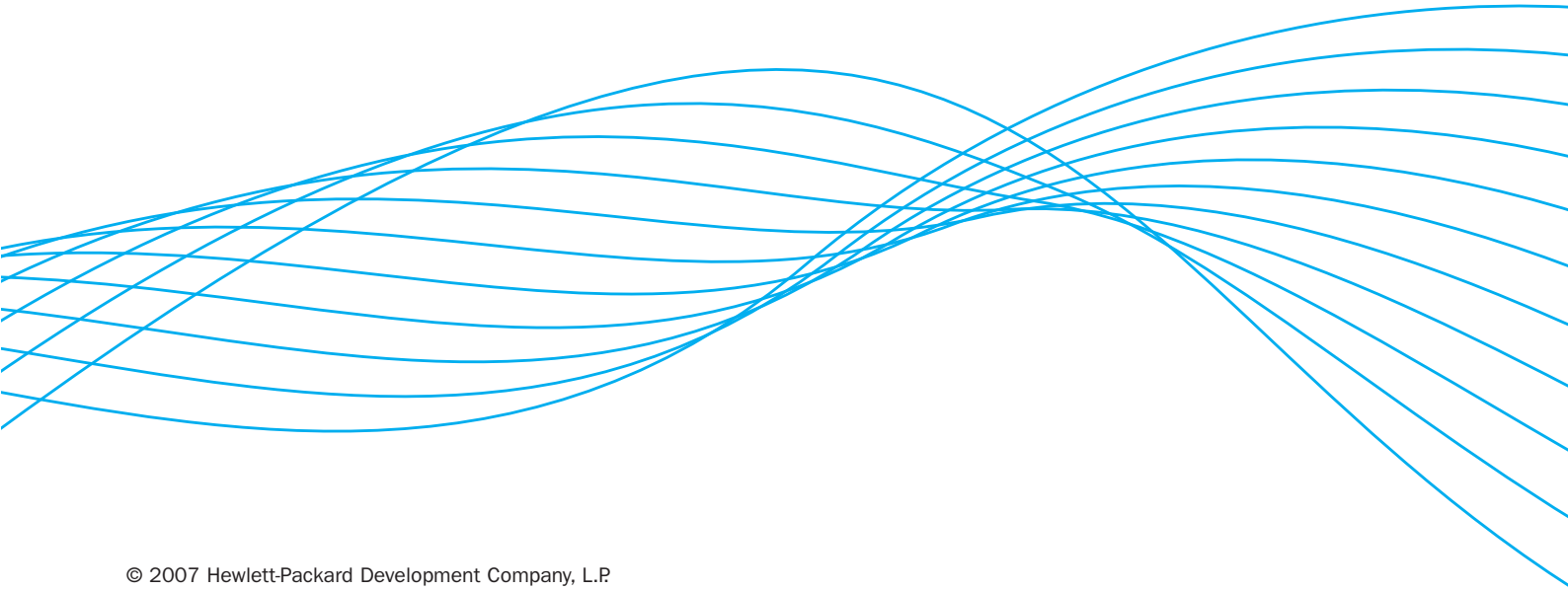
Within the overarching framework of the ProCurve Adaptive EDGE Architecture (AEA) and consistent with its Adaptive Networks vision, ProCurve is delivering powerful new mobility products and solutions that finally make secure, unified wired and wireless networking a reality.

ProCurve's holistic approach to mobility cuts through the confusion and doubt plaguing enterprises that recognize the potential advantages of WLANs but that balk at issues such as wireless-related security concerns and the complexity of trying to manage wired and wireless networks separately. ProCurve provides the first viable unification of wired and wireless networks, with streamlined, secure, centralized management as well as consistent, customized user experiences regardless of how or where users connect.

In addition to these current benefits, ProCurve's standards-based mobility infrastructure solutions and AEA are designed to accommodate future applications and capabilities within their existing framework. Enterprises can add VoWLAN, guest access and other expanded capabilities as business needs evolve or change, cost-effectively and without upgrades to the existing network infrastructure. As a result, enterprises can be confident that the ProCurve mobility infrastructure they implement today will continue to serve them well into the future.

For more information

To learn more about these mobility solutions, go to **www.procurve.eu** or contact your ProCurve reseller or sales representative.



© 2007 Hewlett-Packard Development Company, L.P.
The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

4AA1-4210EEE 09/2007

ProCurve
Networking by HP